DOCUMENT RESUME

ED 357 256 CE 063 678

TITLE	Teaching Generic Skills for the Workplace. RAND Education & Human Resources Program. Policy Brief. Issue Number 2.
INSTITUTION	Rand Corp., Santa Monica, Calif.
SPONS AGENCY	National Center for Research in Vocational Education, Berkeley, CA.
PUB DATE	Apr 93
NOTE	3p.; For related documents, see ED 329 682 and ED 356 380.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Classroom Design; Classroom Environment; *Classroom Techniques; Educational Cooperation; Education Work Relationship; High Schools; *Job Skills; Models; *Problem Solving; Teacher Role; Teaching Methods; Vocational Education; *Work Attitudes
IDENTIFIERS	*Generic Skills

ABSTRACT

Studies conducted by Rand Corporation suggested that students did not need to be taught generic skills and work-related attitudes in actual workplaces. Such instruction could occur effectively at schools in traditional stand alone classrooms. To develop an instructional model for teaching generic skills, researchers used ethnographic methods to study the workings of eight high school classrooms. They found evidence that classrooms that successfully imparted generic skills and attitudes incorporated key structural and cultural features of workplaces, erasing some of the stereotypical distinctions between school and work. The specific characteristics common to classrooms that worked were organized into a model of generic skills instruction with four components: instructional goals, classroom design, teaching techniques, and school context. Teachers in successful classrooms had a mix of instructional goals. Relative emphasis varied by teacher and classroom, but in all cases generic skills and attitudes were targeted explicitly. These teachers pursued their instructional goals by situating learning in authentic practice and focused on intrinsic motivation. The role of the teacher was predominantly that of master to the students as apprentices. Some elements of school context affected classrooms in important ways. The schools' ability to provide resources affected students' access to knowledge. The most important aspect of professional teaching conditions was teacher autonomy. (YLB)

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ISSUE NUMBER 2 POLICY BRIEF APRIL 1993

Teaching Generic Skills for the Workplace

It is widely believed that American high schools must better prepare students for lifelong learning and employment. Key to this preparation, it is agreed, is improved instruction in generic skills (such as problem solving) and work-related attitudes (such as cooperation). Recent studies conducted at RAND for the National Center for Research in Vocational Education have the potential to shift the focus of current debates over how high schools should go about improving instruction in these important skills. Current proposals tend to stress *where* instruction should be provided, weighing the relative advantages and disadvantages of learning in the classroom versus learning in the workplace. For example, an emphasis on shifting the place of instruction is evident in the widespread enthusiasm for youth apprenticeships.

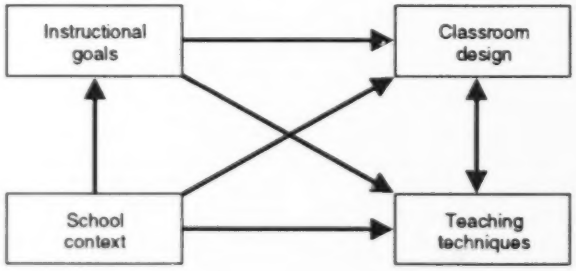
The RAND studies suggest that the debate should consider not only *where* such instruction is provided but also *how*. Students do not need to be taught in actual workplaces in order to learn generic skills and attitudes; such instruction can occur effectively at schools in traditional stand alone classrooms. Thus, a reliance on programs with a workplace component, such as apprenticeships, may be unwarranted and may needlessly restrict the consideration of other effective organizational options. If policymakers focus on the use of an effective instructional model, regardless of setting, they can leave open more options for improving instruction for all students in many different types of programs.

A model for teaching generic skills

To develop an instructional model for teaching generic skills, RAND researchers used ethnographic methods to study the workings of eight high school classrooms in detail. They found evidence that generic skills and attitudes can be imparted successfully in academic and vocational classes that vary widely in subject area (e.g., English, interior design, manufacturing, architectural drafting, and electronics).

Despite subject matter differences, classrooms identified by the researchers as being successful were remarkably similar in fundamental respects. In general, "classrooms that work" in the sense of imparting generic skills and attitudes appear to do so by incorporating key structural and cultural features of workplaces, erasing some of the stereotypical distinctions between school and work. Though operating in traditional school settings, the teachers in these classrooms designed their instruction to require students to learn by working together on projects that resemble activities typical of adult work.

The researchers organized the specific characteristics common to classrooms that work into a model of generic skills instruction. The model has four components: instructional goals, classroom design, teaching techniques, and school context. The four areas interact in ways that are suggested by the figure: instructional goals influence classroom design and teaching techniques; classroom design and teaching techniques influence each other; and school context influences goals, design, and techniques.



Components of an instructional model for generic skills

Target generic skills and attitudes

Teachers in successful classrooms had a mix of instructional goals that included complex reasoning skills, cooperative skills, and work-related attitudes as well as domain-specific skills and knowledge. Relative emphasis among these goals varied by teacher and classroom, but in all cases generic skills and attitudes were targeted explicitly.

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Teachers strove to instill positive work-related attitudes, and they stressed cooperative skills. Although they taught domain-specific skills and knowledge, their view of relevant class content was not constrained by curricular frameworks, standardized tests, textbooks, or follow-on courses.

Situate learning in authentic practice

These teachers pursued their instructional goals by situating learning in authentic practice: that is, they designed their classrooms so that students learned skills and knowledge by performing tasks that reflected the complexities of real work performed by adults. This meant that students engaged in projects rather than tasks and typically worked in groups, requiring them to learn and apply cooperative skills.

The classrooms promoted a culture of practice that simulated actual workplaces to varying degrees. An interior design class, for example, ran much like an interior design firm, and an industrial arts class recreated the culture of the shop floor. The classrooms were based on working cultures rich enough to permit instructors to teach a full range of both domain-specific and generic skills and attitudes.

Teachers in these classrooms focused on intrinsic motivation. They de-emphasized grades and did not discuss performance criteria in terms of grades. All had professional or avocational experience in their respective subject areas and modeled enthusiasm, engagement, and persistence for their students. They placed much of the responsibility for learning in students' hands, requiring them to make many decisions about the direction and conduct of their projects. This aspect of classroom design also accommodated individual differences in ability and interest, increasing student engagement.

Foster a "working" relationship

The role of the teacher in these classrooms was predominantly that of master to the students as apprentices. Typically, teachers moved from group to group monitoring progress and offering limited assistance, instruction, or motivation, much as an "expert consultant" might, but less aggressively. Instruction was offered opportunistically, in response to immediate and specific student needs. Teachers did little lecturing. They relied highly on modeling to demonstrate how an expert practitioner carried out a task or thought through a problem. (Again, this included the modeling of attitudes.) The teachers asked students to articulate their learning, i.e., to verbalize their perceptions or conclusions about their own performance. This technique helped students to understand themselves as learners and to integrate their learning. These classrooms permitted a great deal of exploratory learning. Learning was personalized and not regulated by a textbook or lesson plan.

Provide autonomy and resources

The researchers also analyzed how features of the school affected classrooms. These features include students' access to knowledge, press for student achievement, and professional teaching conditions. Classrooms that worked owed their success to their teachers, not to any aspect of school context. But some elements of school context affected these classrooms in important ways.

For instance, students' access to knowledge in these classrooms was affected by the school's ability to provide resources to support learning, for example, textbooks and materials. More important, school tracking practices affected students' ability to enroll in some courses that offer effective instruction in generic skills.

Teachers in classrooms that worked held high expectations for student learning and behavior. Schools tended to press for student achievement more in academic than in vocational classrooms. However, the teachers in the successful vocational classrooms held expectations for their students that countered that dominant school view.

The most important aspect of professional teaching conditions was teacher autonomy. Autonomy appeared to contribute to the instructor's ability to design classrooms that worked. Among the teachers studied, vocational teachers were given more autonomy because the administration considered them outside the school mainstream. At schools with an academic focus, academic teachers often face constraints that hinder their freedom to design classrooms in ways suited to teaching generic skills.

This Policy Brief highlights major policy-relevant findings of research projects conducted by RAND for the National Center for Research in Vocational Education (NCRVE), University of California, Berkeley. To order the reports on which this Brief is based, contact RAND, P.O. Box 2138, Santa Monica, CA 90407-2138, (310) 393-0411. Please refer to the following publications:

Cathleen Stasz, Kimberly Ramsey, Rick Eden, Joan DaVanzo, Hilary Farris, and Matthew Lewis, Classrooms That Work: Teaching Generic Skills in Academic and Vocational Settings, *MR-169-NCRVE/UCB, 1993, and Cathleen Stasz, David McArthur, Matthew Lewis, and Kimberly Ramsey,* Teaching and Learning Generic Skills for the Workplace, *R-4004-NCRVE/UCB, 1990. RAND is a nonprofit institution that seeks to improve public policy through research and analysis.*

RB-8004